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(56) Documents cited

US 5018644 A

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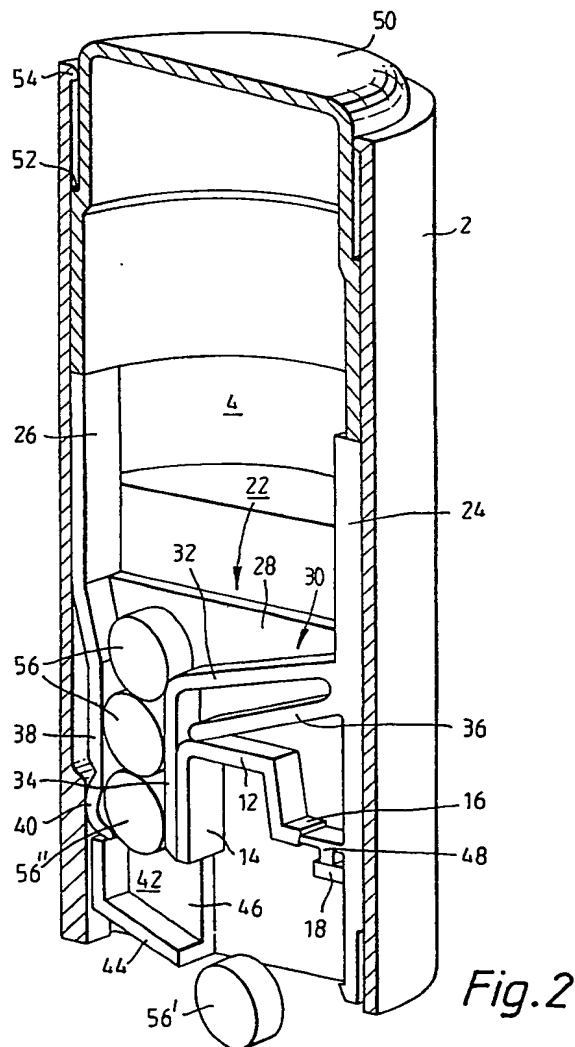
(58) Field of search

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(54) Tablet dispenser

(57) A tablet dispenser for dispensing single tablets at a time comprises a hollow body portion (2), a moulded dispensing mechanism (22) slidable in the body portion (2) between a closed position preventing removal of tablets and an operative dispensing position, and a lid portion (50) closing the upper regions (4) of the body portion (2). Depression of the lid portion (50) moves the dispensing mechanism (22) from its closed position towards its operative position. Resilient means (36) integral with the dispensing mechanism (22) co-operate with the body portion (2) to urge the dispensing mechanism (22) into its closed position, depression of the lid portion (50) being against the bias of the resilient means (36). Control means (38, 40) integral with the dispensing mechanism (22) prevent other than the lowermost tablet being dispensed from the body portion (2) when the dispensing mechanism (22) is in its operative position.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

Fig.1

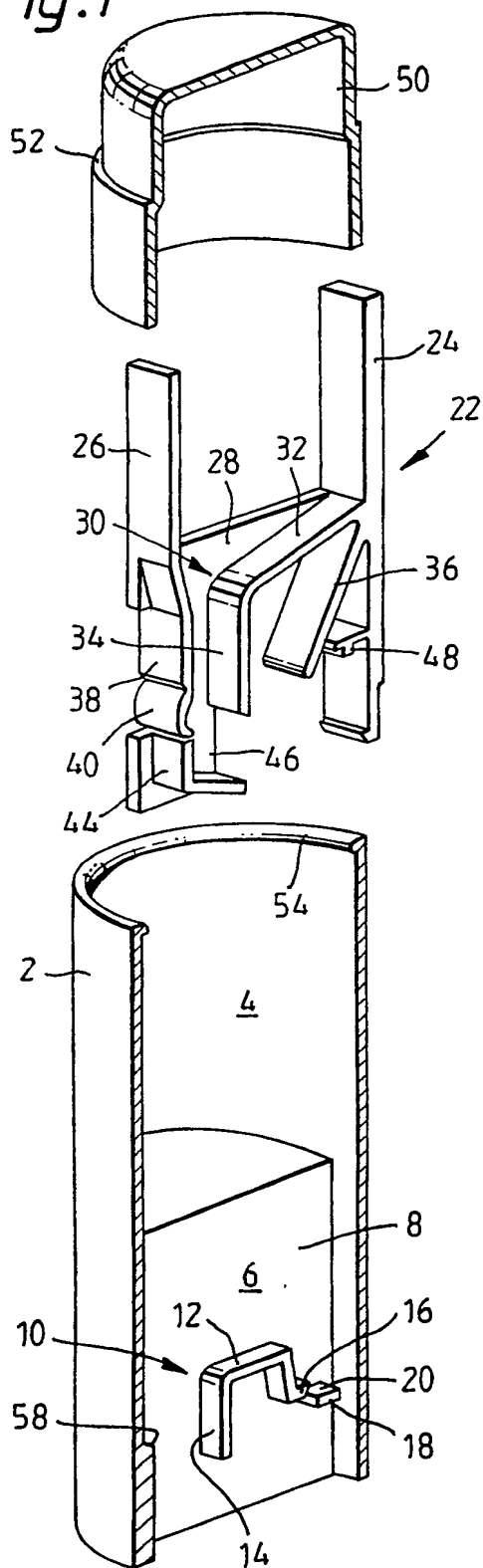


Fig.2

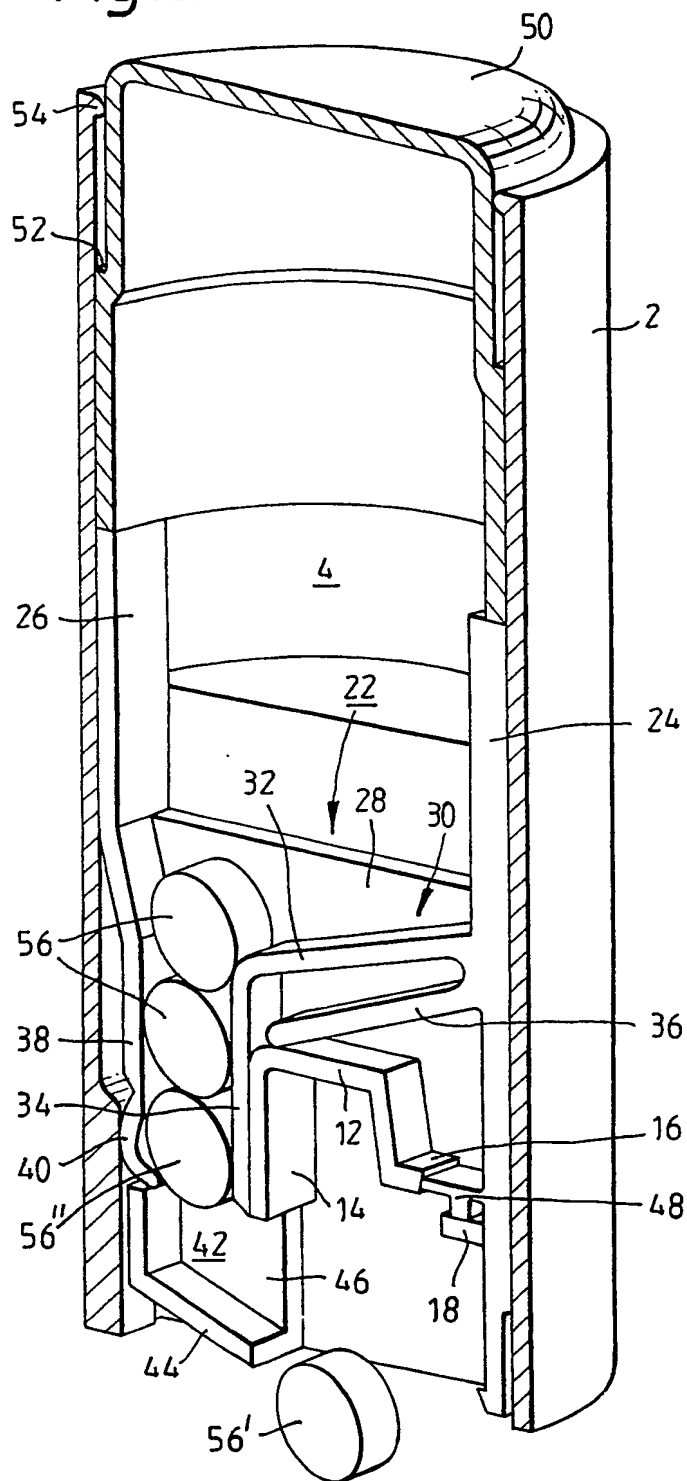


Fig. 3

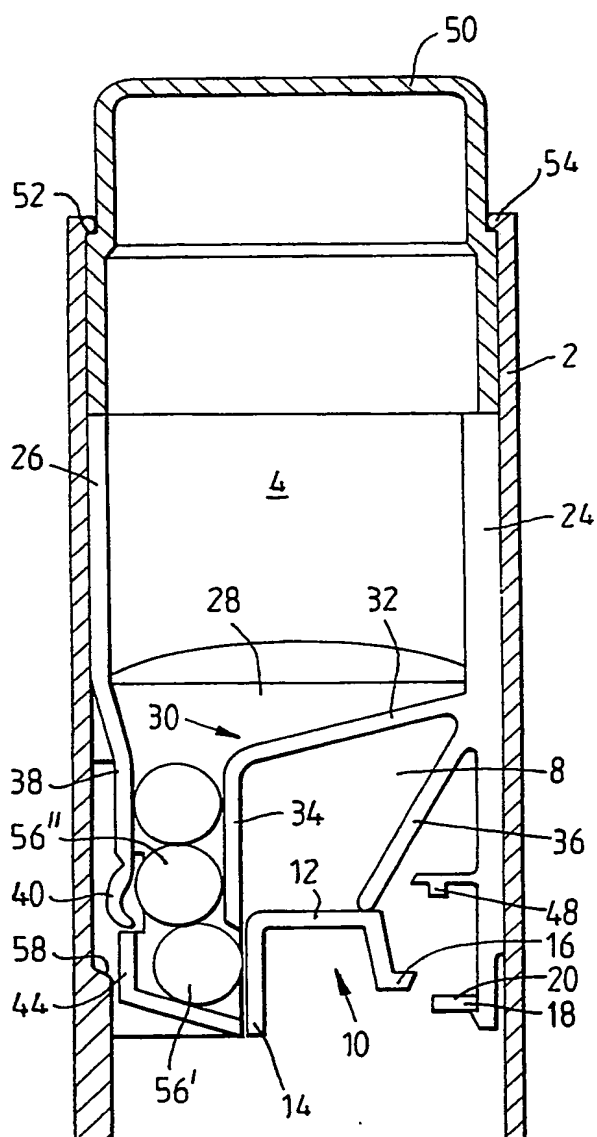
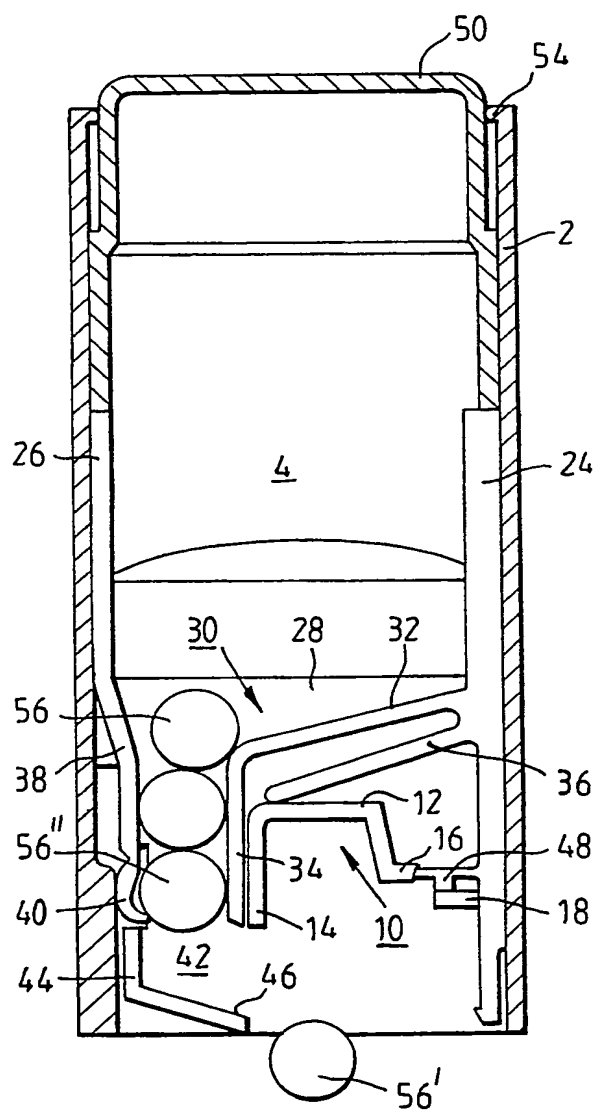


Fig. 4



TABLET DISPENSER

This invention relates to tablet dispensers and more particularly to dispensers incorporating one shot dispense mechanisms whereby a single tablet is dispensed on each operation.

Current one shot tablet dispensers are commonly of generally rectangular transverse section and comprise six separately moulded components with the result that such dispensers are complex and expensive to manufacture and assemble. In particular, the control mechanism for preventing more than one tablet being dispensed at a time is separate from the dispensing mechanism and is of relatively complex construction, adding significantly to the overall cost of the product.

It would be desirable to be able to provide a one shot dispenser that was simpler and cheaper to manufacture than heretofore.

According to the present invention there is provided a tablet dispenser comprising a hollow body portion, a moulded dispensing mechanism mounted in the body portion to be slidable therein between a closed position preventing removal of tablets from the body portion and an operative

position in which a tablet can be dispensed from the body portion, and a lid portion closing the upper regions of the body portion and co-operating with the dispensing mechanism in such a manner that depression of the lid portion within the body portion moves the dispensing mechanism from its closed position towards its operative position, characterised by resilient means integrally moulded with the dispensing mechanism and co-operating with the body portion to urge the dispensing mechanism into its closed position, depression of the lid portion to actuate the dispenser being against the action of said resilient means, and control means integrally moulded with the dispensing mechanism and so arranged that, with the mechanism in its operation position, the control means prevent other than the lowermost tablet in the body portion being dispensed from the lower regions of the body portion.

It will be appreciated that such a dispenser comprises only three separate components, namely the body portion, the lid portion and the moulded dispensing mechanism whereby the dispenser is easier and cheaper both to manufacture and assemble compared with current conventional one shot dispensers.

Preferably the resilient means comprises a strip element extending downwardly of the dispensing mechanism and having a lowermost free end co-operating with a fixed member on the body portion.

Conveniently the dispensing mechanism incorporates therein a substantially vertical chute adapted to receive therein a series of superimposed tablets, the chute having

an outlet in its lower regions which, on movement of the dispensing mechanism from its closed position to its operative position, is moved from a closed position to an open position permitting passage therethrough of the lowermost tablet, the control means comprising a further strip element forming part of a sidewall of the chute and having a lowermost free end which, on movement of the dispensing mechanism to its operative position, is urged inwardly of the chute to co-operate with the second lowermost tablet and prevent movement thereof into the lower regions of the chute.

In a preferred embodiment of the invention, the dispensing mechanism includes, integrally moulded therewith, a laterally projecting hammer member, the body portion including a fixed abutment and a plate member thereon so positioned that, on downward movement of the dispensing mechanism and as the lowermost tablet is dispensed thereby, the hammer member is displaced by, and snaps over said fixed abutment to engage the plate member and to provide an audible indication of the dispensing action.

By way of example only, an embodiment of the invention will now be described in greater detail with reference to the accompanying drawings of which:

Fig. 1 is a cut-away exploded view of the three components of a tablet dispenser according to the invention;

Fig. 2 shows the components of Fig. 1 in their assembled condition to a slightly larger scale and with the

dispensing mechanism in its operative position;

Fig. 3 and 4 are central vertical sections through the dispenser of Figs. 1 and 2 in the closed and operative positions of the dispensing mechanism respectively.

Referring to the drawings, the illustrated dispenser comprises a moulded, generally cylindrical body portion or housing 2 including a cylindrical, upwardly-open upper chamber 4 for storing therein tablets to be dispensed, for example artificial sweeteners, and a generally rectangular-section, downwardly-open lower chamber 6 defined between opposed, spaced vertical walls within the housing 2 one of which is shown at 8.

Integrally moulded with the housing 2 between the walls 8 is a fixed abutment 10 including a horizontal wall 12, a vertical wall 14 and a laterally projecting lug 16 all for reasons which will become apparent. A fixed plate member 18 having a horizontal upper surface 20 is also provided in the housing 2 between the walls 8 just below and outwardly of the lug 16.

The dispenser further includes a moulded dispensing mechanism indicated generally at 22 and adapted to be located in the chamber 6 of the housing 2. More particularly, the mechanism 22 includes a pair of opposed, upright side members 24, 26 interconnected by a back plate 28, a rigid first chute member 30 extending inwardly and downwardly from the member 24 and including a guide portion 32 and a vertical wall portion 34.

Also extending inwardly and downwardly from the side member 24 is a flexible strip element 36.

The other side member 26 includes a flexible control element 38 having a curved lower free end 40 thereto, the element 38 being movable relative to the side member 26 and back plate 28, and defining, together with the member 30, a chute 42 within the mechanism 22.

An angled end member 44 integral with the plate 28 defines, together with the free end of the wall portion 34, a lateral outlet 46 from the bottom end of the chute 42.

Integrally moulded with the side member 24 adjacent the lower regions thereof is an inwardly-projecting, resilient hammer member 48.

The final component of the illustrated dispenser comprises a lid 50 which is a close sliding fit inside the upper regions of the chamber 4 of the housing 2.

On assembly of the described dispenser, the moulded mechanism 22 is located in its closed position within the chamber 6 of the housing 2, determined by engagement of the free end of the strip element 36 with the horizontal wall 12 of the abutment 10. The free end of the wall portion 34 of the chute member 30 is located adjacent the upper extent of the wall 14 of the abutment 10 as best seen in Fig. 3, while the upper regions of the side members 24,26 extend into the chamber 4 of the housing 2.

The lid 50 is located in the upper regions of the chamber 4, its lower periphery engaging the upper ends of the side members 24,26 of the dispensing mechanism again as best seen in Fig. 3. Once positioned within the housing 2, the lid 50 is retained therein by co-operation between an external circumferential shoulder 52 on the lid 50 and



an internal circumferential lip 54 round the upper end of the housing 2.

Tablets 56 to be dispensed are contained within the chamber 4 of the housing 2 with the lower few received within the chute 42 (three are shown in Fig. 3). In the closed position of the dispensing mechanism, the wall 14 of the abutment 10 blocks the outlet 46 and prevents removal of any tablets.

Movement of the dispensing mechanism towards its operative position is achieved by depressing the lid 50 which in turn depresses the mechanism 22 against the resilience of the strip element 36 which is distorted as shown in Fig. 4. In its lowermost, fully depressed position, the outlet 46 is positioned below the wall 14 whereby the lowermost tablet 56' can freely roll from the dispenser.

As the mechanism 22 approaches this lowermost position, the curved free end 40 of the control element 38 engages a fixed shoulder 58 formed internally of the lower regions of the housing 2 whereby said free end 40 is urged inwardly of the chute 42 below the second lowermost tablet 56" to prevent movement of that tablet 56" into the position vacated by the tablet 56'.

During the final downward travel of the mechanism 22 and as the tablet 56' is being dispensed thereby, the hammer member 48 first of all engages with, and then snaps over the free end of the lug 16 and in so doing hits against the surface 20 of the plate member to provide an audible indication of the dispensing operation.

On release of the lid 50, the resilient strip element 36 returns the mechanism 22 and the lid 50 to their rest or closed positions in preparation for a further dispensing operation of the now lowermost tablet 56", the control element 38 also returning to its rest position to permit the tablet 56" to fall to the bottom of the chute 42.

Thus there is provided a relatively simple one shot dispenser which is cheaper to manufacture and easier to assemble than heretofore in that it comprises only three separate components, the resilient return means, in the form of the strip element 36, and the one shot control means, in the form of the flexible control element 38, being integrally moulded with the dispensing mechanism itself.

CLAIMS

1. A tablet dispenser comprising a hollow body portion, a moulded dispensing mechanism mounted in the body portion to be slidable therein between a closed position preventing removal of tablets from the body portion and an operative position in which a tablet can be dispensed from the body portion, and a lid portion closing the upper regions of the body portion and co-operating with the dispensing mechanism in such a manner that depression of the lid portion within the body portion moves the dispensing mechanism from its closed position towards its operative position, characterised by resilient means integrally moulded with the dispensing mechanism and co-operating with the body portion to urge the dispensing mechanism into its closed position, depression of the lid portion to actuate the dispenser being against the action of said resilient means, and control means integrally moulded with the dispensing mechanism and so arranged that, with the mechanism in its operation position, the control means prevent other than the lowermost tablet in the body portion being dispensed from the lower regions of the body portion.

2. A tablet dispenser as claimed in claim 1 in which the resilient means comprises a strip element extending downwardly of the dispensing mechanism and having a lowermost free end co-operating with a fixed member on the body portion.

3. A tablet dispenser as claimed in claim 1 or claim 2 in which the dispensing mechanism incorporates therein a

substantially vertical chute adapted to receive therein a series of superimposed tablets, the chute having an outlet in its lower regions which, on movement of the dispensing mechanism from its closed position to its operative position, is moved from a closed position to an open position permitting passage therethrough of the lowermost tablet, the control means comprising a further strip element forming part of a sidewall of the chute and having a lowermost free end which, on movement of the dispensing mechanism to its operative position, is urged inwardly of the chute to co-operate with the second lowermost tablet and prevent movement thereof into the lower regions of the chute.

4. A tablet dispenser as claimed in any one of claims 1 to 3 in which the dispensing mechanism includes, integrally moulded therewith, a laterally projecting hammer member, the body portion including a fixed abutment and a plate member thereon so positioned that, on downward movement of the dispensing mechanism and as the lowermost tablet is dispensed thereby, the hammer member is displaced by, and snaps over, said fixed abutment to engage the plate member and to provide an audible indication of the dispensing action.

5. A tablet dispenser substantially as described with reference to and as illustrated by the accompanying drawings.

Patents Act 1977  
Examiner's report to the Comptroller under  
Section 17 (The Search Report)

-10-  
Applicant number  
GB 9114322.2

Relevant Technical fields

- (i) UK CI (Edition K) B8P (PG3A, PG3D, PG3E, PG3X)  
(ii) Int CI (Edition 5) B65D 83/04

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

MIKE HENDERSON

Date of Search

16 OCTOBER 1992

Documents considered relevant following a search in respect of claims 1-5

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	US 5018644 (HACKMANN et al) whole specification relevant	1,2
X	US 4767023 (HACKMANN et al) whole specification relevant	1,2
X	US 4402425 (VON SCHUCKMANN) whole specification relevant	1,2

SF2(p)

TP - doc99\fil000617

Category	Identity of document and relevant passages	Relevant to claim(s)

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